

## BASELINE NUTRIENT MANAGEMENT PLAN



FOI.

The Baseline Nutrient Management Plan includes information on:

- ✓ Existing Crop Rotation
- ✓ Recommended field specific soil and water conservation practices
- ✓ Sensitive area management
- ✓ Operation and maintenance
- ✓ Field maps, soils maps, and soil map legend
- ✓ Soils information, including soil test results

### I. CROP PRODUCTION SEQUENCE (ROTATION)

This plan was developed based on the following crop production sequence and available cropland acres:  
Enter crop rotations and average acres per crop.

### II. SOIL AND WATER CONSERVATION PRACTICES

Your field specific application recommendations have considered proximity to sensitive features and inherent erosion and runoff potentials. The following soil and water conservation practices have been or should be implemented to reduce erosion and runoff potential on fields receiving fertilizer applications.

- |   |   |
|---|---|
| <input type="checkbox"/> Mulch tillage          | Fields: List fields where mulch tillage is planned                    |
| <input type="checkbox"/> Contouring             | Fields: List fields where contouring is planned                       |
| <input type="checkbox"/> Contour Strip-Cropping | Fields: List fields where contour strip-cropping is planned           |
| <input type="checkbox"/> Grass/hay in rotation  | Fields: List fields where adding grass/hay to the rotation is planned |
| <input type="checkbox"/> Terraces               | Fields: List fields where terracing is planned                        |
| <input type="checkbox"/> Filter Strips          | Fields: List fields where filter strips are planned                   |
| <input type="checkbox"/> Other Practices        | Fields: List fields for other practices                               |

Consult your **Soil and Water Conservation Plan** for additional detail.

### III. FIELDS WITH SENSITIVE AREAS REQUIRING SPECIAL MANAGEMENT

Your fields may contain features that require special management considerations in addition to implementation of soil and water conservation practices. These features increase the potential for applied nitrogen and phosphorous to move towards ground water or surface waters. Elevated levels of nitrogen in drinking water can cause illness or even death in babies. Scientific trials show direct relationships between soil test phosphorus (STP) levels and soluble algal available phosphorous in runoff. The higher the soil phosphorous levels, the greater the possibility of accelerating algae growth if that runoff reaches surface waters. Additionally, it takes many years to reduce STP levels once they have climbed to extremely high levels.

### **Sensitive Areas**

Sensitive features are areas where natural factors increase the potential for degradation of natural resources including water quality. The potential for degradation can be minimized or eliminated by understanding and accounting for these factors when planning nutrient applications.

Your field-specific sensitive features and management practices to use on them are listed on the following reports. Additional general reports on nutrient application restrictions or recommended management practices may have been included in this plan for informational purposes. ("✓" signifies required plan information)

- ✓ **Maps showing the location of sensitive features**
- ✓ **"Management Practice Considerations for Nitrogen and Phosphorus" report**
- ☐ **"Nutrient Application Restrictions in Sensitive Areas" report**
- ☐ **Other reports included**

### **Applications within Vulnerable Public Drinking Water Supply Management Areas**

Fields receiving commercial nitrogen fertilizer **are** located within a public drinking water supply management area (dwsma) that has been classified as vulnerable to contamination. As a result, nitrogen management practices listed in the **"Management Practice Considerations for Nitrogen and Phosphorus"** report should be followed. Additional management practices may be required as part of the Wellhead Protection Plan WHP developed to protect your vulnerable public drinking water supply. Those practices **have** been included in this plan.

### **Nitrogen and Phosphorous Loss**

The general sensitivity of the farm to nitrogen transport has been determined based on soil texture in your fields and depth to ground water. Additional factors used in this evaluation include: (Enter any additional factors or type "No additional factors"). Based on this evaluation, nitrogen transport and loss potentials are **Very High**. Field specific loss ratings can be found on the attached **"Field Nitrogen Loss Assessment"** report.

The general sensitivity of the farm to phosphorus transport has been determined based on the University of Minnesota's Phosphorus Index. Based on this evaluation, phosphorous transport and loss potentials are **Very High**.

### **Fields with High Soil Phosphorous Levels**

Your field specific plans and sensitive area practices have considered soil test phosphorous (STP) levels. You should manage your fields to avoid excessive build-up of STP. Recommendations include:

- Maintain a STP level of approximately 21 ppm (42 lbs./ac) Bray P1. This will almost always provide crops with enough phosphorous.
- Plan the rate and frequency of commercial fertilizer applications to avoid STP buildup to 75 ppm as Bray P1. Cease applications before STP levels reach 150 ppm (300 lbs./ac.) as Bray P1.

## **IV. OPERATION AND MAINTENANCE**

### **1.) Operation**

- Soils will be sampled on each field at least once every four years for organic matter, pH, phosphorus and potassium. Sampling for residual soil nitrate should be done annually where appropriate. Sampling and testing for soil nitrate **are** being planned as a crop N use strategy for this operation. Samples will be collected and handled according to Univ. of Minn. or NRCS guidelines (USDA-NRCS-MN fact Sheet **MN-NUTR3-Soil Sampling**) and analyzed by a Minnesota Department of Agriculture (MDA) certified laboratory.

- Your application equipment will be calibrated and maintained according to manufacturer directions and MDA guidelines (MDA fact sheet **Maintaining Anhydrous Ammonia Equipment**). Applied rates will not deviate from planned rates by more than approximately 15%.
- Minimize exposure to chemical fertilizers-particularly ammonia forms of fertilizers (MDA Fact Sheets **Minnesota Ammonia Rules Revised** and **Anhydrous Ammonia Quick Checklist**). Protective clothing including footwear, a respirator and gloves will be worn when appropriate.
- Fertilizer storage areas will be protected from weather to minimize runoff, leakage, and loss of material.
- An **emergency response plan** will be prepared as a contingency for a storage facility spill, leak or failure or in the event of spill while transporting fertilizer to your fields. At your request forms used to develop an emergency response plan **have** been attached to this plan.

## 2.) Maintenance

Maintain application equipment in good operating condition and clean after applications.

## 3.) Record keeping-Maintain for a six-year period.

### Field specific records

- Crop yields, planting and harvest dates and crop residues removed.
- Type of nutrient applied to each field (commercial fertilizer, other nutrient source) and analysis of the nutrient.
- Application dates and rates, including application methods and time to incorporation.

At your request record keeping forms **have** been included in this plan.

## 4.) Plan Review

This baseline plan should be reviewed annually and updated as necessary.

## V. ANNUAL CROP NUTRIENT MANAGEMENT PLAN

Your attached annual **Crop Nutrient Management Plan** contains field specific recommendations for fertilizer application methods, timing and rates. The application timing and incorporation recommendations take into consideration potential for loss of nitrogen and/or phosphorus to air, runoff and leaching. The rate recommendations are based on realistic yield goals, soil tests, and University of Minnesota fertilizer guidelines.

***This plan was developed based on USDA-Natural Resources Conservation Service of Minnesota standards and any applicable federal or state regulation in place as of the date shown below. Additional practices may be necessary to comply with local regulations. This plan was developed based on the current crop and animal production practices of the farm operation. Changes in those production practices could result in the need for modifying and updating of this plan.***

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Planner signature

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Date

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Planner Name

\_\_\_\_\_  
Title / Occupation

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Street Address

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Phone Number

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City / State / Zip Code

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CCA # or other certification